

The development of the model of regional system of control and provision of education quality

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Summary. A university was examined as an object of informatization, its problem areas of activity were defined, the model of the regional system of control and assurance education quality, which includes systems of monitoring, analyzing and forecasting the statistical data obtained from all the educational institutions in the region, is proposed in this paper.

Key words: university, the automation of the university management, the module of statistical data collection, analysis, monitoring, forecasting.

INTRODUCTION

Further socio-economic and political changes in society, the strengthening of the statehood, the entry of Ukraine into the international civilized society are impossible without the modernization the higher education system aimed at training specialists according to the level of international requirements [Shevchenko 2010]. One of the conditions of Ukraine entering into European and world educational space is the introduction into the Ukraine higher educational system of the main ideas of the European credit transfer and accumulating system (ECTS), which operates at the institutional, regional, national and European levels and is a key requirement of the Bologna Declaration of 1999. [Van der Vende 2000].

An important aspect of the modernization of education in Ukraine is reforming the control system of quality of education of future professionals. the quality control allows to match the actual level of education of graduates with current regulatory requirements of academic and vocational training and European standards of education [Kornienko 2009].

At present, the use of computer and information technologies in various spheres of our life is becoming more popular. The field of education is not an exception. The automation of the university management is still one of the important areas of informatization of higher education. Moreover, the need to solve this problem, the requirements for information system providing its solution, enhanced due to the introduction of strategic planning and the creation of a quality management system at the university [Ribcev, Dodonova 2010].

The creation of a modern automated information-analytical system of management of a large university is an extremely complex task requiring considerable material and intellectual resources. Significant attention and resources are given by the university community to the solution of this problem [19].

OBJECTS AND PROBLEMS

University as an object of informatization is a complex organizational institution, which has several features distinguishing it from organizations of other types.

1. A university is a large hierarchical structure with remote offices and branches with a constantly changing staff and students (on average 30% of the students and staff are changed over one year).

2. University is an organization that has a wide range of activities (education, research, provision of a variety of paid services, etc.).

3. University is an innovative structure in which innovations occur quite frequently and may lead to changes in business processes, organizational structure, departments' functions, document circulation, etc.

4. University is a public educational institution, which should be able to share information with the outside world.

5. University is a democratic structure with many centers of influence and quite complex mechanism of development of management decisions [Krjukov 2007].

The activities of the modern university are a multi-character. There are several problem areas of university activity: administrative management and management accounting, finance, management of educational process, document management, information resources management, educational process itself, research work, etc. (fig. 1).

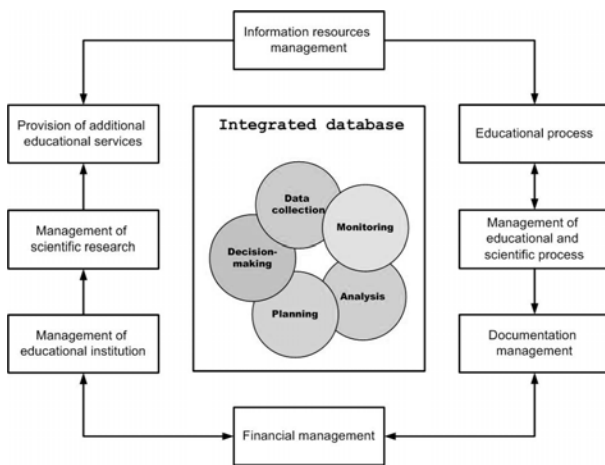


Fig. 1. Problem areas of the activity of the higher educational institution

The actual process of management of educational institutions shall consist of four inter-related classes of problems:

- 1) planning is a formalized formulation of efforts directions of all personnel to achieve the common goals of educational institutions;
- 2) organization is the creation of a structure for optimal performance of work and solution of problems of educational institutions;
- 3) motivation is the provision of the staff of the structural subdivisions of educational institutions with technical means and moral encouragement;
- 4) control is the establishment of standards and rules, definition the results achieved and correction of actions.

Geographically, the majority of universities have distributed in a certain region structure which can be connected through a single system [Zharikov 2010]. Likewise, it is advisable to connect all educational institutions in the region for the improvement of management efficiency, timely receipt of necessary statistical data. Now such information management system is needed which would cover not only all areas of education, but also the spheres of economy and national economy [Dyadychev 2011].

To implement the tasks described above it is necessary to create a quality system of monitoring, analyzing and statistic data forecasting (SMAF). SMAF should combine the following structures: higher education institutions of the region, a center of employment of the region, the Department of Education of the region and the Ministry of Science and Education, Youth and Sports of Ukraine (fig. 2).

For the organization of the first block of SMAF in each high school it is necessary to organize the server that stores all statistical data of the university, in total it is the data of educational and managing activities of the dean's offices, selection committee, student accounting of contractual and budget forms of training, as well as the personnel department. If the university does not have the system of automation of university management, automated control system is installed on the server, this system contains the following modules:

1. Module of automation of educational and managing activities of dean's offices.
2. Module of selection committee work.
3. Module of work of the student accounting of the budget form of training.
4. Module of work of the student accounting of the contract form of training.
5. Module of work of the personnel department.
6. Module of the collection of statistical data on all existing modules.

If university has a system of automation of university management, then only the module of the collection of statistical data on the university is installed on the server. SMAF has three main blocks (fig. 2):

- a) The first block is the collection of statistical data on the university;
- b) The second block is the collection of statistical data on all universities of the region;
- c) The third block consists of modules of work with the data of the second block.

The scheme of the work of the first block is shown in fig.3.

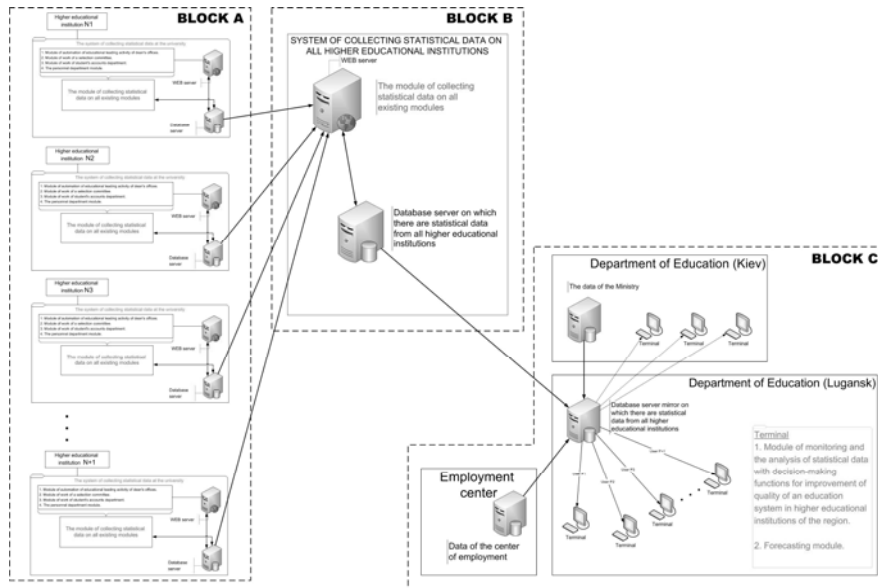


Fig. 2. The model of system of monitoring, analyzing and forecasting of statistical data of higher educational institutions of the region

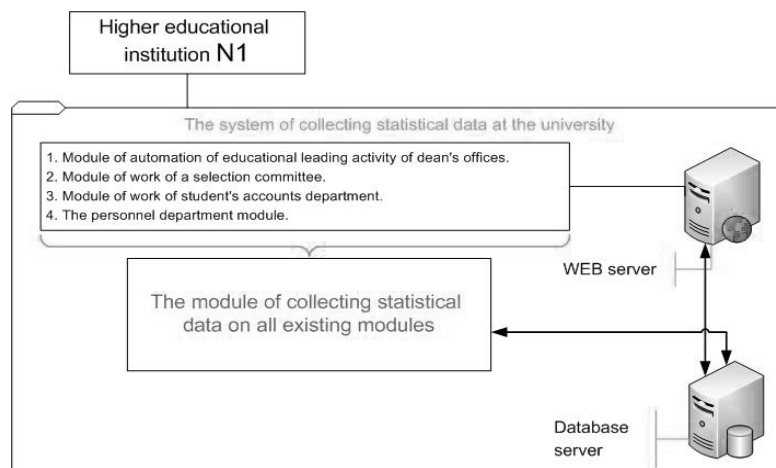


Fig. 3. Collecting of statistical data on university

To implementation of the second block of SMAF (fig. 4) it is necessary to organize in the region a server with the module of the collection of statistical data on all universities of all the existing modules of statistical data collection. The data will be copied to the main server at a certain time, so as not to disrupt the work of the units working directly with the stored data.

For the organization of the third block of SMAF (fig. 5) it is necessary to organize the server at the education department of the regional center (for example, in our case, it is the city of Luhansk), mirroring storage of the second unit will be hosted on a server, which makes the system independent of the possible problems connecting to a remote server and provides the fastest operation of terminals in the department.

Also, the module of monitoring and statistical data analysis with the functions of decision making to improve the quality of education in higher educational institutions of the region is installed on the server. The data from the employment center of the region and the Ministry of Education of Ukraine are required for the functioning of the forecasting module.

The algorithm of the SMAF work is the following:

1. Statistical data are collected from of modules of the automation systems of the university on the server in a certain databases, data to the database can be exported also via XML format [Valeriy Dyadychev, Andriy Kolesnikov 2008].

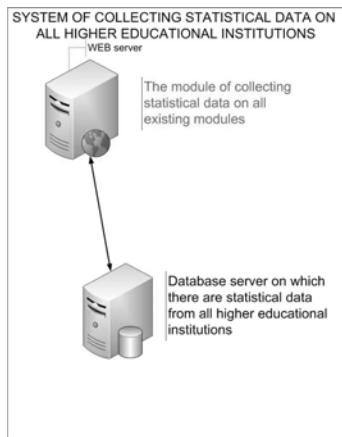


Fig. 4. The block of statistical data collection of all universities of the region

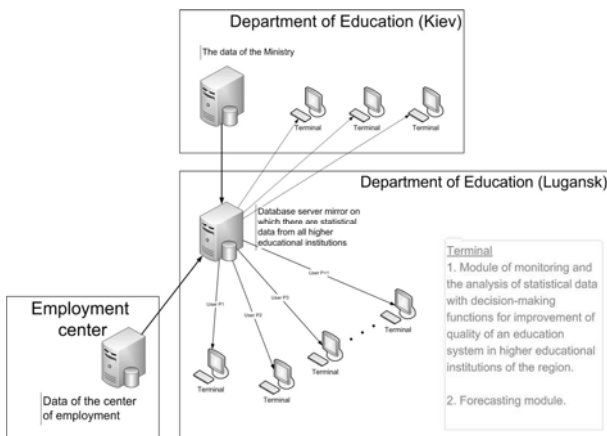


Fig. 5. The block of modules of work with the block B data

2. Further the data in the night time or at the request of the university are copied or updated on the main server, after the completion of copying and data integrity checking the information is cloned on the server of the department of education of the region.

3. From the regional employment center the data on the necessary specialists and on specialists which are in excess in the region comes on the server of the education department of the region.

4. From the the Ministry of Education the data on the plan of entrants reception, on specialists which the country needs and so on come on the server of the education department of the region.

5. The employees of the education department of the region according to available data can conduct monitoring, fulfill analysis and forecasting, make the necessary corrective actions, as well as have the ability to solve problems with excess and shortage of specialists in certain branches of the region.

CONSLUSIONS

In summary it should be noted that the model of a regional system of control and guaranteeing of education quality was developed in this article. It includes the following main components: data collection system of the university, data collection system of all universities in the region, the module of monitoring and analysis of statistical data, module of prediction. Using the automated control system the management of higher education institutions can promptly obtain any information they need, has the ability to measure and analyze the basic processes of the quality management system, to monitor the learning process and on the basis of the received data's evaluates the quality of services and, in case of discrepancy the criteria of the quality of higher education, makes timely corrective action. Creation of such regional system is supposed to involve not only education but also the Ministry of Education, the regional department of education, employment center, all of this allows to improve the effectiveness and efficiency of work, to support high quality educational services stably, to increase the satisfaction of students alumni's and employers.

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РАЗРАБОТКА МОДЕЛИ РЕГИОНАЛЬНОЙ СИСТЕМЫ КОНТРОЛЯ И ОБЕСПЕЧЕНИЯ КАЧЕСТВА ОБРАЗОВАНИЯ

*Валерий Дядичев, Игорь Рыбцев,
Виктория ДодONOва*

Аннотация. В статье в качестве объекта информатизации рассмотрен университет, определены его проблемные области деятельности, предложена модель региональной системы контроля и обеспечения качества образования, которая включает в себя системы мониторинга, анализа и прогнозирования статистических данных, полученных со всех учебных заведений региона. Ключевые слова: университет, автоматизация управления университетом, модуль сбора статистических данных, анализ, мониторинг, прогнозирование.